

AMENDMENTS TO THE CLAIMS

Claims 1-84 were filed originally.

Claims 23-32, 54, and 65-68 have been previously canceled.

Claims 1, 5, 18, 33, 51, 60, and 69 are amended.

Accordingly, claims 1-22, 33-53, 55-64, and 69-84 remain pending.

1. (Currently Amended) A computer-implemented method for providing assistance to a non-native speaker in preparing written text in a native language, the method comprising:

receiving non-native words of a non-native language and at least one native word of a native language that are entered by a user; ~~and~~

identifying at least one non-native word corresponding in meaning to the native word; and

converting the native word to a corresponding non-native word.

2. (Original) A method as recited in claim 1, wherein the non-native language is English and the native language is Chinese.

3. (Original) A method as recited in claim 1, wherein the non-native words are English words and the native word is Chinese Pinyin.

4. (Original) A method as recited in claim 1, wherein the native word is written in phonetic text.

1 5. **(Currently Amended)** A method as recited in claim ~~Error!~~
2 ~~Reference source not found~~ 1, further comprising displaying the non-native
3 words and the native word within a common entry line.

4
5 6. **(Original)** A method as recited in claim 1, wherein the converting
6 comprises determining a most probable non-native word given a context
7 established by the non-native words previously entered by the user.

8
9 7. **(Original)** A method as recited in claim 1, wherein the native word
10 is entered in phonetic form, the converting further comprising:

11 translating the native word from the phonetic form to a language form; and

12 translating the native word in the language form to the non-native word.

13
14 8. **(Original)** A method as recited in claim 1, wherein the native word
15 is entered in phonetic form, the converting further comprising:

16 determining a most probable language form of the native word and
17 translating the native word from the phonetic form to the most probable language
18 form; and

19 determining a most probable non-native word given the most probable
20 language form of the native word.

21
22 9. **(Original)** A method as recited in claim 1, wherein the native word
23 is entered in phonetic form and the converting comprises translating the native
24 word from the phonetic form to one or more native words in a language form, the
25

1 method further comprising displaying the one or more native words in the
2 language form.

3
4 10. (Original) A method as recited in claim 9, further comprising:
5 displaying the non-native words and the phonetic form of the native word
6 within a common entry line; and
7 displaying the one or more native words in the language form within a pop-
8 up box adjacent the entry line.

9
10 11. (Original) A method as recited in claim 10, further comprising
11 ordering the native words within the pop-up box according to probabilities.

12
13 12. (Original) A method as recited in claim 10, further comprising
14 enabling a user to scroll within the pop-up box.

15
16 13. (Original) A method as recited in claim 1, wherein the native word
17 is entered in phonetic form and the converting comprises:

18 translating the native word from the phonetic form to one or more native
19 words in a language form;

20 displaying the one or more native words in the language form;

21 translating at least one of the native words in the language form to one or
22 more non-native words; and

23 displaying the one or more non-native words.
24
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1 14. **(Original)** A method as recited in claim 13, further comprising:
2 displaying the non-native words and the phonetic form of the native word
3 within a common entry line; and
4 displaying the one or more native words in the language form within a pop-
5 up box adjacent the entry line.

6
7 15. **(Original)** A method as recited in claim 13, further comprising:
8 following translation to the one or more non-native words, displaying the
9 non-native words and the language form of the native word within a common
10 entry line; and
11 displaying the one or more non-native words within a pop-up box adjacent
12 the entry line.

13
14 16. **(Original)** A method as recited in claim 1, further comprising
15 displaying a bilingual sentence pair having a native sentence written in the native
16 language and including the native word and a corresponding non-native sentence
17 written in the non-native language and including the non-native word.

18
19 17. **(Original)** One or more computer-readable media having computer-
20 executable instructions that, when executed on a processor, direct a computer to
21 perform the method as recited in claim 1.

22
23 18. **(Currently Amended)** A computer-based method for providing
24 assistance to a speaker of a second language in preparing written text in a first
25 language, the method comprising:

1 displaying, via a user interface, character strings in a first language together
2 with at least one character string of a second language as the user enters the
3 character strings;

4 identifying at least one character string in the first language corresponding
5 in meaning to the character string of the second language;

6 converting the character string of the second language to an other another
7 character string of the first language; and

8 replacing the character string of the second language with said other
9 character string of the first language in the user interface.

10
11 19. (Original) A method as recited in claim 18, wherein the first
12 language is English and the second language is Chinese.

13
14 20. (Original) A method as recited in claim 18, further comprising
15 displaying the character strings of the first and second languages within a common
16 entry line.

17
18 21. (Original) A method as recited in claim 18, wherein the converting
19 comprises determining a most probable character string given a context
20 established by the character strings previously entered by the user.

21
22 22. (Original) One or more computer-readable media having computer-
23 executable instructions that, when executed on a processor, direct a computer to
24 perform the method as recited in claim 18.

25

1 23 -32. (Canceled).

2
3 33. (Currently Amended) A method comprising:

4 receiving non-native words of a non-native language and at least one native
5 word of a native language, the native word being received in a first form of the
6 native language;

7 translating the native word from its first form to at least one native word of
8 a second form; and

9 translating the native word of the second form to at least one non-native
10 word.

11
12 34. (Original) A method as recited in claim 33, wherein the non-native
13 language is English and the native language is Chinese.

14
15 35. (Original) A method as recited in claim 33, wherein the non-native
16 words are English words and the first form of the native word is Chinese Pinyin
17 and the second form of the native word is Chinese Mandarin.

18
19 36. (Original) A method as recited in claim 33, wherein the translating
20 the native word from its first form comprises selecting a most likely native word
21 of the second form based on statistical probabilities.

22
23 37. (Original) A method as recited in claim 33, further comprising
24 accepting misspelled versions of the native word in the first form.
25

1 38. **(Original)** A method as recited in claim 33, further comprising
2 displaying the non-native words and the native word within a common entry line.

3
4 39. **(Original)** A method as recited in claim 33, wherein the translating
5 the native word from its second form to the non-native word comprises:

6 determining possible non-native word candidates from the second form of
7 the native word;

8 generating first probabilities associated with the non-native word
9 candidates that indicate how likely individual non-native word candidates were
10 intended by the user given the context established by previously entered non-
11 native words;

12 generating second probabilities associated with the non-native word
13 candidates that indicate how likely the second form of the native word was
14 intended given individual non-native word candidates; and

15 deriving a most probable non-native word from among the non-native word
16 candidates based on the first and second probabilities.

17
18 40. **(Original)** A method as recited in claim 33, further comprising
19 replacing the native word in its first form with the non-native word.

20
21 41. **(Original)** One or more computer-readable media having computer-
22 executable instructions that, when executed on a processor, direct a computer to
23 perform the method as recited in claim 33.

1 42. **(Original)** A method comprising:
2 enabling a user to enter non-native words of a non-native language and a
3 phonetic text string of a native language;
4 displaying the non-native words and the phonetic text string within a
5 common entry line;
6 translating the phonetic text string to at least one native word of the native
7 language;
8 determining possible non-native word candidates from the native word of
9 the native language;
10 generating first probabilities associated with the non-native word
11 candidates that indicate how likely individual non-native word candidates were
12 intended by the user given the context established by previously entered non-
13 native words;
14 generating second probabilities associated with the non-native word
15 candidates that indicate how likely the native word was intended given individual
16 non-native word candidates;
17 deriving a most probable non-native word from among the non-native word
18 candidates based on the first and second probabilities; and
19 translating the native word to the most probable non-native word.
20

21 43. **(Original)** A method as recited in claim 42, wherein the non-native
22 language is English and the native language is Chinese.
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1 44. **(Original)** A method as recited in claim 42, wherein the non-native
2 words are English words, the phonetic text is Chinese Pinyin, and the native word
3 is Chinese Hanzi.

4
5 45. **(Original)** A method as recited in claim 42, wherein the translating
6 the phonetic string comprises selecting most likely native words based on
7 statistical probabilities.

8
9 46. **(Original)** A method as recited in claim 42, wherein the determining
10 comprises using a bilingual dictionary to identify the non-native word candidates.

11
12 47. **(Original)** A method as recited in claim 42, wherein the generating
13 first probabilities comprises using a statistical language model.

14
15 48. **(Original)** A method as recited in claim 42, wherein the generating
16 second probabilities comprises using a translation model.

17
18 49. **(Original)** A method as recited in claim 42, further comprising
19 displaying the most probable non-native word in place of the phonetic text string.

20
21 50. **(Original)** One or more computer-readable media having computer-
22 executable instructions that, when executed on a processor, direct a computer to
23 perform the method as recited in claim 42.

1 51. (Currently Amended) A cross-language input user interface for
2 providing assistance to a non-native speaker in preparing written text in a native
3 language, comprising:
4 a line-based entry area;
5 non-native text displayed within the line-based entry area; ~~and~~
6 native text displayed together with the non-native text within the line-based
7 entry area; ~~and~~
8 indication of the native text to facilitate replacement with non-native text
9 corresponding in meaning to the native text; and
10 converted non-native text, converted from the native text, substituted for
11 the native text within the line-based entry area.

12
13 52. (Original) A cross-language input user interface as recited in claim
14 51, wherein the non-native text comprises English and the native text comprises
15 Chinese.

16
17 53. (Original) A cross-language input user interface as recited in claim
18 51, wherein the line-based entry area is oriented horizontally.

19
20 54. (Canceled).

21
22 55. (Original) A cross-language input user interface as recited in claim
23 51, further comprising a candidate list of non-native words that are possible
24 translations of the native text.
25

1 56. (Original) A cross-language input user interface as recited in claim
2 51, further comprising a candidate list of non-native words that are possible
3 translations of the native text, the non-native words being ordered within the
4 candidate list according to a ranking.

5
6 57. (Original) A cross-language input user interface as recited in claim
7 51, wherein the line-based entry area is oriented in a first direction and further
8 comprising a candidate list of non-native words that are possible translations of the
9 native text, the candidate list being oriented in a second direction orthogonal to the
10 first direction.

11
12 58. (Original) A cross-language input user interface as recited in claim
13 51, further comprising a sentence window, invokable by a user, to present
14 bilingual sentences that include the native text and the non-native text.

15
16 59. (Original) A word processor comprising the language input user
17 interface as recited in claim 51.

18
19 60. (Currently Amended) A cross-language input user interface for
20 providing assistance to a speaker of a second language in preparing written text in
21 a first language, comprising:

22 an entry area that accepts first words written in a first language and at least
23 one second word written in a second language; and
24
25

1 indication of the second word to facilitate replacement with at least one first
2 word in the first language corresponding in meaning to the second word in the
3 second language; and

4 a candidate list of first words that are possible translations from the second
5 word.

6
7 61. (Original) A cross-language input user interface as recited in claim
8 60, wherein the first language is English and the second language is Chinese.

9
10 62. (Original) A cross-language input user interface as recited in claim
11 60, wherein the entry area comprises a line-based entry area oriented in a first
12 direction and the candidate list is presented adjacent the line-based entry area and
13 oriented in a second direction orthogonal to the first direction.

14
15 63. (Original) A cross-language input user interface as recited in claim
16 60, further comprising a sentence window, invocable by a user, to present
17 bilingual sentences written in the first and second languages.

18
19 64. (Original) A word processor comprising the language input user
20 interface as recited in claim 60.

21
22 65-68. (Canceled).

69. (Currently Amended) A cross-language writing architecture for providing assistance to a non-native speaker in preparing written text in a native language, comprising:

a user interface to enable a user, who is accustomed to a native language, to:

enter a native word in the native language;

recognize entry of the native word;

provide at least one non-native word corresponding in meaning to the native word;

enter non-native words from a non-native language; and

a spelling tool to assist the user with correct entry of the non-native words.

70. (Original) A cross-language writing architecture as recited in claim 69, wherein the user interface allows the user to enter a native word from the native language instead of the non-native word, the spelling tool comprising a translator to translate the native word to a corresponding non-native word.

71. (Original) A cross-language writing architecture as recited in claim 70, wherein the translator utilizes a bilingual dictionary.

72. (Original) A cross-language writing architecture as recited in claim 70, wherein the translator utilizes a statistical language model.

73. (Original) A cross-language writing architecture as recited in claim 70, wherein the translator utilizes a bilingual translation model.

1 74. **(Original)** A cross-language writing architecture as recited in claim
2 69, wherein the spelling tool utilizes a thesaurus.

3
4 75. **(Original)** A word processor comprising the language input
5 architecture as recited in claim 69.

6
7 76. **(Original)** A cross-language writing architecture comprising:
8 a user interface to enable a user, who is accustomed to a native language, to
9 enter non-native words from a non-native language; and
10 a sentence recommendation tool to suggest possible sentence structures in
11 the non-native language.

12
13 77. **(Original)** A cross-language writing architecture as recited in claim
14 76, wherein the sentence recommendation tool comprises:

15 a bilingual corpus containing bilingual sentence pairs written in both the
16 native language and the non-native language; and

17 a sentence retrieval unit to retrieve bilingual sentence pairs from the
18 bilingual corpus.

19
20 78. **(Original)** A cross-language writing architecture as recited in claim
21 77, wherein the sentence recommendation tool ranks the sentences retrieved from
22 the bilingual corpus.

23
24 79. **(Original)** A word processor comprising the language input
25 architecture as recited in claim 76.

1 80. **(Original)** A cross-language writing architecture comprising:
2 a user interface to enable entry of English words together with Chinese
3 Pinyin;
4 a spelling tool to translate the Chinese Pinyin to one or more Chinese
5 words, the spelling tool being further configured to translate the Chinese words to
6 one or more English words that may be substituted for the Chinese Pinyin; and
7 a sentence recommendation tool, invokable by a user, to offer pairs of
8 corresponding sentences written in English and Chinese to demonstrate how an
9 English word is used in a sentence.

10
11 81. **(Original)** A cross-language writing architecture as recited in claim
12 80, wherein the spelling tool comprises:

13 a Chinese-English dictionary to determine possible English word
14 candidates from the Chinese words;

15 an English language model to determine how likely the user intended the
16 English word candidates given previously entered English words; and

17 an English-Chinese translation model to determine how likely individual
18 Chinese words were intended given the English word candidates.

19
20 82. **(Original)** A cross-language writing architecture as recited in claim
21 80, wherein the sentence recommendation tool comprises:

22 a bilingual corpus containing bilingual sentence pairs written in both
23 English and Chinese; and

24 a sentence retrieval unit to retrieve bilingual sentence pairs from the
25 bilingual corpus.

1 83. (Original) A word processor comprising the language input
2 architecture as recited in claim 80.

3
4 84. (Original) One or more computer-readable media having computer-
5 executable instructions that, when executed on a processor, direct a computer to:
6 enable entry of English words and Chinese Pinyin;
7 translate the Chinese Pinyin to at least one Chinese word;
8 determine possible English word candidates from the Chinese word;
9 generate first probabilities associated with the English word candidates that
10 indicate how likely each of the English word candidates was intended given
11 previously entered English words;
12 generate second probabilities associated with the English word candidates
13 that indicate how likely the Chinese word was intended given each of the English
14 word candidates;
15 derive a most probable English word from among the English word
16 candidates based on the first and second probabilities; and
17 translate the Chinese word to the most probable English word.